DOCUMENT RESUME

ED 071 743 PS 006 282

AUTHOR	Amundson, Marian Stuehrenberg
TITLE	A Preliminary Screening Program to Identify Functioning Strengths and Weaknesses in Preschool Children.
PUB DATE	Aug 72
NOTE	88p.; M.S. in Ed. thesis, Moorhead State College, Minn.
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	Auditory Tests; Glossaries; Language Tests; Learning Disabilities; *Learning Readiness; Masters Theses; *Measurement Instruments; *Preschool Children; Psychomotor Skills; Raw Scores; *Screening Tests; Statistical Data; Test Results; *Test Validity; Visual Measures
IDENTIFIERS	Metropolitan Readiness Tests; Wizard of Oz Preschool Preliminary Screening

ABSTRACT

The purpose of this study was to compare two instruments for screening preschool children for potential learning problems. The two instruments used were the Metropolitan Readiness Tests (MRT) and the Wizard of Oz Preschool Preliminary Screening Program. The children tested on both measures were members of a self-contained kindergarten class. MRT testing was done in small groups by the teacher and the screening by the author and two trained volunteers. The children were screened individually for motor, visual, auditory and language competencies. Those falling below recommended scores were referred for further evaluation. The computerized comparison of the raw scores on the two instruments showed a correlation coefficient of 0.9075, with a 0.005 level of significance (N=23) using Pearson's Product Moment. Numerous recent studies have shown the MRT to be a valid predictor of future learning success or failure. Thus, the Preliminary Screening is also a valid test. The four appendixes to the report provide the following: A. tables of tests scores; B. A Preliminary Screening Program to Identify Functioning Strengths and Weaknesses in Preschool Children; C. Formula for Pearson's Product Moment Correlation Coefficient; and D. Glossary. (Author/DB)

FILMED FROM BEST AVAILABLE COPY

U. S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

ED 071743

A PRELIMINARY SCREENING PROGRAM TO IDENTIFY FUNCTIONING STRENGTHS AND WEAKNESSES IN PRESCHOOL CHILDREN

An Independent Study
Presented to
the Graduate Faculty
Moorhead State College

In Partial Fulfillment
of the Requirements for the Degree
Master of Science in Education

By
Marian Stuehrenberg Amundson

August 1972

PS 006282

ED 071743

ANNOUNCEMENT OF ORAL EXAMINATION

Name of Candidate:	Marian Stuehrenberg Amundson
Degree Program:	Master of Science in Education Elementary Teaching
Thesis Title:	A Preliminary Screening Program to Identify Functioning Strengths and Weaknesses in Preschool Children
Time and Place:	August 17, 1972, at 1:00 p.m. Conference Room B - Owens Hall
Examining Committee:	Dr. William Gingold, Chairman Dr. John Wasson Dr. Joseph Thorman
External Examiner:	Dr. Eleanor Ritchie

PS 006292

ABSTRACT

The purpose of this study was to compare two instruments for screening preschool children for potential learning problems. The two instruments used were the Metropolitan Readiness Tests and the Wizard of Oz Preschool Preliminary Screening Program.

The advantage of using the Preliminary Screening is that large numbers of young children can easily be screened through play activities suitable for this age group. Thus preventive therapy and educational programming may be planned to circumvent frustration and failure in later school experiences.

The children tested on both measures were members of a self-contained kindergarten class. MRT testing was done in small groups by the teacher and the screening by this author and two trained volunteers.

The children were screened individually for motor, visual, auditory and language competencies. Those falling below the recommended scores were referred for further evaluation.

The computerized comparison of the raw scores on the two instruments showed a correlation coefficient of 0.9075, with a 0.005 level of significance (N=23) using Pearson's Product Moment.

Numerous recent studies have shown the MRT to be a valid predictor of future learning success or failure. Thus the Preliminary Screening is also a valid test.

ACKNOWLEDGEMENTS

The writer wishes to express her sincere appreciation to Dr. William Gingold, Dr. John Wasson and Dr. Joseph Thorman for their guidance and assistance in the preparation of this paper.

TABLE OF CONTENTS

TABLE		PAGE
1.	INTRODUCTION	1
	Statement of the Problem	2
	Significance of the Study	2
	Delimitations of the Study	3
	Definition of Terms	4
2.	REVIEW OF THE LITERATURE	6
	The Predictive Value of MRT	6
	Factors Indicating Future Academic Problems	8
	Screening Programs Identifying Learning Problems at an Early Age	10
3.	PROCEDURE	15
	A Pre-Kindergarten Screening	15
	A Kindergarten Screening, May, 1972	17
	A Preliminary Screening Program to Identify Functioning Strengths and Weaknesses in Preschool Children	19
4.	ANALYSIS OF THE DATA	23
5.	SUMMARY, CONCLUSIONS, OBSERVATIONS, SUGGESTIONS FOR FURTHER STUDY	29
	Introduction	29
	Summary of the Study	30
	Observations of the Writer	32

TABLE OF CONTENTS (continued)

CHAPTER	PAGE
5. Continued	
The Need for Further Study.....	32
BIBLIOGRAPHY.....	35
APPENDICES.....	40

LIST OF FIGURES

FIGURE		PAGE
1.	Scattergram Comparing MRT Listening Subtest Raw Scores With Screening Auditory Battery Raw Scores	25
2.	Scattergram Showing Total Scores on Each Instrument	26
3.	Referrals on the Basis of Screening Scores	27

Chapter 1

INTRODUCTION

In order to identify children with potential learning problems who need preventive therapy during the kindergarten year, a screening program for pre-kindergarten children is needed.

Such a screening program should be easy to use, be easy to set up, use inexpensive materials, be manned by volunteers and in-service personnel and pinpoint which children are in need of immediate referral for alleviating learning problems before formal schooling begins. Above all, it should be an enjoyable experience for the children, non-threatening and yet providing meaningful results.

To establish a screening program for pre-kindergarteners in order to identify for referrals those who show evidence of potential learning disabilities, some volunteer workers in Arlington, Texas, have worked out a preliminary set of tests which might answer the needs of public schools or other interested organizations.

This program was used for screening large numbers of children in a clinic setting. Quickly trained volunteers presented the tests to children at twenty-four stations set up to measure strengths and weaknesses in four broad areas

of skills and abilities. Scoring, simply and easily recorded and read, uses a scheme of levels of attainment set up so that high risk children can be immediately recognized. They are referred on the spot to proper diagnosticians and therapists. Cost of the material is mere pennies and the children enjoy the experience of playing the games, doing the stunts and tricks and partaking of juice and cookies at the end of their journey to the "Land of Oz".

Statement of the Problem

The purpose of this study is to compare the results of a standardized, widely used first grade readiness test with the results obtained on the Wizard of Oz screening program by measuring the same group of kindergarten children who performed on the two assessments in the space of less than two weeks.

Significance of the Study

Several research studies have been done for identifying children who may have learning disabilities due to sensory-motor, visual-perceptual-motor and language inadequacies. Some discussions have occurred showing the need for diagnosing potential trouble in pre-school disadvantaged children in order to set up compensatory curriculum (Deutch, 1968). Universities and school districts

represented at the Association for Children with Learning Disabilities conference in 1968 indicated the necessity for a screening process and suitable remediative curricula. Interest in early identification has been growing, but diagnosing large numbers of young children presents a formidable task involving the efforts of many professionals and the expenditure of hours of work in the process.

A simple method for efficiently testing large numbers of young children is needed that will identify those who have problems in various areas of learning.

Traditional procedures attempt to make up for a lack of middle-class experience. Perceptual and conceptual development comparable to that of the middle class child is the aim of another type. The Montessori methods are used to advance sensori-motor skills. Programmed language training (Bereiter and Engelmann, 1966), which was adapted from techniques used in teaching the deaf, stimulates the cognitive processes. The questions of what experiences are necessary and how they are to be presented have not been resolved.

Delimitations of the Study

In this study, a simple, easy to use tool for identifying children with learning disabilities was examined. The writer was not concerned with sophisticated

batteries of formal tests administered by experts. Only the children who were identified by the screening would undergo formal diagnosis and assessment by the professional staff.

The children were all members of a kindergarten class. Twenty-three of the twenty-seven who were screened were included in the final study. Due to an outbreak of illness among the children, four were absent for part of the testing.

Two tests were administered to each child. The Metropolitan Readiness Tests were given by the teacher in small groups. The Wizard of Oz Screening was conducted by the writer and two volunteers. Each child was tested and scored individually.

Definition of Terms

Screening for learning disabilities is a method of identifying children who demonstrate the possibility of having such problems. They are referred to professional evaluators for further analysis and diagnosis. The screening does not involve the administration of full-scale sophisticated assessment tools and techniques. It indicates which children may need more complete testing and observation.

The definition of learning disabilities as set forth by the National Advisory Committee to the Bureau of Education for the Handicapped, U.S. Office of Education, is as follows: Learning disabled children are those who "exhibit a disorder in one or more of the basic psychological processes involved in understanding or using spoken or written language. These may be manifested in disorders of listening, thinking, talking, reading, writing, spelling or arithmetic. They include conditions which have been referred to as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, developmental aphasia, etc. They do not include learning problems which are primarily due to visual, hearing or motor handicaps, to mental retardation, emotional disturbance or to environmental disadvantage." (Minskoff, 1971, p. 249.)

ED 090282

Chapter 2

REVIEW OF THE LITERATURE

The Predictive Value of MRT

The predictive value of the Metropolitan Readiness Tests has been the subject of numerous studies. Loisanne Bilka (1971) reports that of five readiness measures administered to nine first grade classes at the beginning of the year, the Murphy-Durrell Readiness Test and the Metropolitan Readiness Tests were the strongest contributing predictors of academic success.

Factor analysis was the method used in exploring predictor variables for the Stanford Achievement Test Primary I Battery compared with five batteries of readiness tests by Olson and Rosen (1971). The results showed that the Metropolitan Readiness Tests do make a contribution to predicting reading achievement. Their studies on the use of six readiness measures concluded that reading readiness tools need further assessment in order to isolate factors specific to developmental sequenced reading behaviors.

In a paper presented at the annual meeting of the American Educational Research Association in New York, February, 1971, Laura D. Harckham reported on the multiple

prediction of reading achievement in grades one through four using kindergarten measures. The Metropolitan Readiness Tests along with three other measures were administered by kindergarten teachers. Scores on the MRT predicted most successfully subsequent reading achievement on standardized tests in succeeding grades. The Metropolitan Achievement Test was used for grade one and the Stanford Achievement Test for grades two, three and four. The correlation was .74 for the third grade.

The University City School District in the state of Missouri conducted research designed to predict achievement in the first primary year (1969). Twenty-four factors were used in predicting first primary year performance. Tests were given at the end of kindergarten or the middle of first grade. The total raw score of the MRT appeared to be the best measure of prediction as compared with results of the Stanford Achievement Test which was given at the end of the first year. Combinations of tests gave only slightly better predictions.

In June 1970 the University City Schools reported on the prediction of achievement in the first primary year through the use of the Primary Mental Abilities (PMA) and the MRT. The results of the tests suggested that identifying and strengthening some prerequisite skills may help children to achieve higher levels of learning.

The MRT was more predictive for boys and the PMA for girls, but of the two the PMA showed a slight advantage for groups consisting of both boys and girls. The total PMA scores for boys were more closely related to Stanford Vocabulary, Spelling and Arithmetic. The total MRT scores were closely related to Word Meaning, Word Study and Paragraph Meaning. For girls the total PMA scores correlated more highly with achievement scores than did the MRT. The conclusion was that teachers should decide which instrument to use as a predictor depending on what information would be most valuable in planning for individualized programming.

Factors Indicating Future Academic Problems

At kindergarten age a formal screening would indicate which children are academic high risk cases (Jansky, 1969). Through the use of diagnostic procedures, each child's strengths and weaknesses would be investigated, so that instruction could be planned to meet the needs of each.

Arthur Jensen (1969) presents evidence suggesting that differences in intelligence is not accounted for by variations in environment but must be due, at least partially, to genetic differences.

However, many studies with young children show that intelligence is not a fixed quality present at birth. Intelligence can be taught and appropriate experiences help the young child grow intellectually (Almy, 1964). Early environmental interaction is of crucial importance as experience determines the rate of development and the final level of intelligence. One hour spent with young children is worth hundreds of hours of remedial teaching in the upper grades in what usually are discouraging attempts to help failing pupils (Bloom, 1964).

In a survey by the School District of University City, Missouri, taken in June, 1970, teachers identified a concern for the learning problems of children. Areas pinpointed for teaching stressed motor, multi-sensory, and visual skills and language and cognitive abilities.

Other research findings and literature stressed the importance of developing skills and the positive relationship of each skill area to intellectual growth.

Motor: Kephart, 1960.

Multi-sensory: Montessori, 1965.

Visual: Frostig, 1964.

Cognitive: Piaget, 1952.

Language: Vygotsky, 1962.

The relationship between ability in each of the above skills to future success in academic areas calls

for further research. At least one researcher, Inga K. Kelly, has reported (August, 1971) that visual-motor skills instruction did not enhance reading readiness and that developmental growth was not affected by a program stressing visual-motor skills.

Such a report, contradicting the results of other studies, points to the next step in the path towards early remediation of learning disabilities: comparing later academic learning successes with educational strategies tailored to overcome handicaps in each of these skill areas.

Screening Programs Identifying Learning Problems at an Early Age

In a pilot incidence study of a learning disabilities program which was conducted by the Rocky Mountain Educational Laboratory at Greeley, Colorado, classroom teachers conducted screening of children using a teacher's observation checklist, a spelling test and a draw-a-man test. Since kindergarten or younger children were not available for the screening, children of second grade classrooms were tested.

An attempt was made to develop a tool which could be used by teachers to identify "high risk" pupils, that is those with potential learning disabilities. In this

pilot study, concurrent and predictive validity was established by using three levels of screening: the teachers' classroom screening followed by psycho-educational testing and evaluation by medical personnel.

In order to establish reliability, the classroom teachers met and viewed video-tapes of typical behaviors which they then categorized and classified. In most cases, the teachers all agreed upon the questions. Where there was disagreement, the questions were rephrased. This procedure established reliability. In some instances the language of the screening test was revised to eliminate ambiguity and to clarify the language used in the directions.

Of the 2400 children enrolled in the second grade classes, 478 were identified by the teachers as "high risk" or having severe learning difficulty learning in the classroom.

In summarizing, this study shows that:

1. Classroom teachers are able to identify symptoms of learning disabilities in children.
2. Teachers can identify children with learning problems and efficiently help an educational diagnostician with meaningful data.
3. The Classroom Screening Instrument appears to describe discriminately the children with learning problems.
4. Teachers identify slow learners using the same terms as for learning disabled.

5. Severe and lesser learning disabilities are discerned by the teacher.

6. Teachers also identified those who are mentally retarded.

The effectiveness of motor, sensory and perceptual activities within the kindergarten program was studied by William Reece (1966). A limited survey of perceptual-motor activities promised academic achievement, especially in reading readiness. The expectation was that a broad range of motor-sensory-perceptual testing would predict more comprehensive potentialities. Maturation alone did not account for the readiness level.

The child who was low in motor-sensory-perceptual performance, whether he had been in the training program or not, was likely to be low in academic readiness also.

The use of pretraining measures for predicting progress during the year was not feasible. The Metropolitan tests predicted faintly and associated with the motor-sensory-perceptual (MSP) results consistently. But the teacher ratings in predicting motor-tactile and auditory performance were completely random.

Hopkins and Sitkei (1967) compared predictions of grade one reading performance as indicated by intelligence tests versus reading readiness tests. "Reading readiness tests did at least as well in predicting first grade reading performance." The readiness tests were considered

preferable to the intelligence tests because they took less time, were easier to interpret, and were less expensive. The researcher also stated that if a readiness test were to be misinterpreted, it would be less damaging to the pupil than the misinterpretation of an intelligence test would be.

The Meeting Street School Screening Test is reported by Peter Hainsworth (1969). It is built on tests preferred by the pediatric neurological team members and designed for use by school personnel. Culturally different children are discriminated against in the usual IQ and achievement tests. This test taps "lower level skills". It predicts academic success for such children better than either type of instrument (IQ or achievement) when used independently.

Haring and Ridgway (1967) developed procedures for early identification of children with learning disabilities using formal batteries of tests. In this writer's opinion, such a method is prohibitive due to time required when large numbers of children are involved.

A thorough diagnosis of each learning disabled child's case is fundamental to planning his educational remediation. What is needed is a simple method for identifying these disabled children from among their psychoneurologically unimpaired peers so that complete

evaluation can begin. Administering a thorough assessment to each child who comes to school is a ponderous and inefficient process.

Chapter 3

PROCEDURE

A Pre-Kindergarten Screening

In the light of the high incidence (10-20%) of learning disabled children among the general school population, it seems expedient to make every attempt to identify such children and undertake the proper steps toward prevention of learning problems at as early an age as possible. Once identified, these children become the subjects of diagnosis, remediation and preventive therapy. Public schools can contribute toward the identification by means of a pre-school screening before the child enters kindergarten. Many public schools now offering a kindergarten program also plan for some type of pre-registration; often this procedure takes place in the spring and may consist of more or less elaborate arrangements for introduction of mother and child to the school program. In conjunction with this type of introductory program, a screening process would locate the children who may be potential problem learners in future academic situations. Provision would be made at this time for referral to the proper resource for further diagnosis, parent consultation and possible therapy. Such a screening program is the Wizard of Oz Preliminary Screening Program.

Teachers, aides, nurses, speech therapists, counselors and psychologists are some of the personnel a school might use at testing stations and at the checkout station. Volunteers could come from the ranks of parents, civic-minded club members, teenagers, and professional groups.

The format of the program is such that the children are individually occupied at each of twenty-four stations with forty-five minutes required for each child to make the journey following the "yellow brick road". Concurrently, mothers may attend the kindergarten tea in another room.

In May, 1972, using the Wizard of Oz program, twenty-seven pre-kindergarteners were screened in one and a half hours.

In order to circumvent low parent and teacher expectations for the child, inservice training and supervision for the teacher and professional counseling and guidance for the parent should be implemented. After further testing and diagnosis, each child's educational therapy would be planned on a prescription basis and his progress continuously observed and evaluated by professionally trained personnel from the learning disabilities field.

A Kindergarten Screening, May, 1972

This study took place in an elementary school in a West Central Minnesota school system. The town has a population of over 14,000 and is situated in a predominantly agricultural region. This school, part of the city system, draws its students from the suburban-type neighborhood and also from a less economically endowed area nearby. About one third of the students in this particular school arrive each day by bus from surrounding farms.

The twenty-three students in the final study were members of a kindergarten class with a total screening of 27 children. Four were absent during part of the second testing period due to an outbreak of mumps in the community. Because of the length of absence in each case and the approaching close of the school year, subsequent testing was not possible.

The kindergarten class which was studied was taught by one teacher with help from part-time volunteer mothers in a self-contained classroom situation.

Kindergarten children are enrolled for the school year in which they become five years old before September tenth. In special cases children may enter at an earlier age upon the parents' request for evaluation and testing. Among the children in this study all were within the age range of 5-8 to 6-7. Thus we could assume that none had

entered at an earlier age. Since having children repeat the kindergarten year has not been the policy of the school, all of the children were enrolled in kindergarten for their first year. Those who performed poorly on the Metropolitan Readiness Tests and who, in the teacher's judgement, needed further readiness work, were recommended for placement in a special readiness program to be initiated for the coming year.

The Metropolitan Readiness Tests were administered by the classroom teacher during May of 1972. The Wizard of Oz screening tests were given during one week after the Metropolitan tests had been completed. The author of this study and two trained volunteers administered the screening to the children individually. Each test item was given only once to each child. The test scores were totaled at the time and the total raw scores on both instruments were analyzed by means of an electronic computer (The Honeywell 115 computer) using Pearson's Product Moment Correlation. Total raw score means the total of all the items correct on each test.

A Preliminary Screening Program to Identify Functioning Strengths and Weaknesses in Preschool Children.

The purpose of this screening program is to discover strengths and weaknesses in individual children before formal schooling begins. The functioning of motor, visual, auditory, and language abilities are assessed so that experiences in early education can pattern responses to an acceptable level of accomplishment before formal schooling is begun.

Children who need referral and therapy in specific areas will be identified.

The tests in this screening program are arranged about the theme from the Wizard of Oz story and the popular movie by the same name. Some of the sources for the standardized items are The Illinois Test of Psycholinguistic Abilities; Kephart norms; Frostig Visual Perception Test; Ilg and Ames Readiness Battery; and the de Hirsch Predictive Index.

Evaluation of specific areas are done in motor, visual, auditory and language competencies. The motor battery includes assessment of skills in imitating body movement, performing developmental movement, identification of body parts, awareness of left and right positions on self, relating self to positions in space and knowledge

of body image. The second battery, which pinpoints visual perception, categorizes abilities such as visual discrimination and memory, use of the eyes convergently, fusion, tracking, visual-motor coordination and discrimination of figure-ground.

Discrimination and memory in the auditory field are measured in the third battery. Remembering and repeating what has been heard, giving appropriate meaning to what has been heard and matching auditory and motor responses complete the auditory assessment.

In the language battery, concepts of inner language are tested. Categorizing lists of objects named and demonstrating abilities of expressive language through verbal and nonverbal motor encoding are other capabilities children are asked to perform.

In this clinic setting, over a hundred children may be screened in one day's time. Each child takes his ticket following the "yellow brick road" from one testing station to the next. At each station a test administrator presents one test item, while the scorer at that station records the child's score for that item on his "ticket" (test score sheet). Each test item is a game to be played by the child and scored (1) if performed correctly and (0) if not correctly.

Test results will be invalidated if any hints, examples, clues, or second tries are allowed.

Volunteer guides help direct the child from one area to the next. The guides will also help the children to find restrooms, or wait with them in case the next testing station is still occupied.

At the checkout station a team trained to analyze the score-sheets will make referrals for further study and/or preventive therapy to the parents of the child in question.

The score sheet is kept on file at the screening center, while the parents receive a card listing areas of "adequate or above strengths".

One point is scored for success in each test item, with six points total possible on each test, and thirty-six possible points for each battery (motor, visual, auditory, or language). A perfect score in all four areas for maximum performance is 144 points.

These points are not IQ equivalents, but only indicate functioning strengths and weaknesses in each area. Although written evidence was not available, it is assumed by this writer that standardization for the Wizard of Oz Screening scores was obtained by comparison with scores from similar subtests of standardized tests.

A score of four or more obtained on any one test is considered adequate for that test and a score of thirty or

more on a complete battery shows competent functioning in that area. One-hundred-twenty or more points scored on the complete screening test presupposes strengths sufficient for academic success in first grade classroom learning tasks.

An adequate total score may still show a deficiency and need for referral and/or remediation in a definite weak area, which, if neglected, may later become a block to learning activities.

Children whose scores do not total above 24 points need further evaluation to discover whether the screening did not fully measure his potential or whether the possibility of severe dysfunction can be found which could later lead to academic learning problems.

The screening is an assessment of strengths and weaknesses on a preliminary basis only. It is not a diagnostic tool and does not predict learning problems but indicates which children may need further evaluation and diagnosis.

Chapter 4

ANALYSIS OF THE DATA

The comparison of the raw scores (total number of correct items from the Wizard of Oz Screening with the raw scores from the Metropolitan Readiness Tests) was performed by computer analysis. Pearson's correlation coefficient for an N = 23 is 0.9075 which is significant at 0.005 level. This high significant correlation with the Metropolitan Readiness Tests shows that the Wizard of Oz screening program is a valid instrument since the Metropolitan Readiness Tests have been shown to be the most predictive of future academic success and failure when compared with a number of other similar instruments. From this comparison, the two tests measure readiness for first grade work as observed in May of the kindergarten year.

The reliability of the MRT has been shown to be .90 or above in three different independent estimations.

When the scores of boys and of girls are compiled, the girls as a group show a better performance for each instrument than the boys. Eighty-five percent of the girls scored above the mean as compared to 50 percent of the boys in The Wizard of Oz Screening. In

the MRT, 20 percent of the boys were above the mean for that test while 84 percent of the girls were above the mean. This would seem to show that boys as a group performed better on the Wizard of Oz screening than on the MRT.

A scattergram (Figure 1) showing total raw scores on each instrument displays a cluster spread along the top of a descending line. The three lowest scores for each test dramatically indicate three children with definite need for further diagnosis and suitable educational placement, remediation and therapy.

Another scattergram (Figure 2) interestingly shows the same pattern, using only the scores of MRT listening subtest and the Auditory Battery of the screening instrument. The two scattergrams show that the performance on the total tests was comparable to the performance in related subtests in each test.

Referrals (Figure 3) based on the screening tests included one person who rated "B, High Normal" on the MRT. He attained a very low score on the motor battery. This person exhibited great confusion in spatial orientation and in left-right discrimination. The examiner who administered the visual-motor subtest for this child noted on his form-copying subtest: "This boy begins at right and works to the left." This may be an indication, along with the lack of motor skills, that the child needs special

Figure 1

SCATTERGRAM COMPARING MRT LISTENING SUBTEST RAW SCORES WITH SCREENING AUDITORY BATTERY RAW SCORES

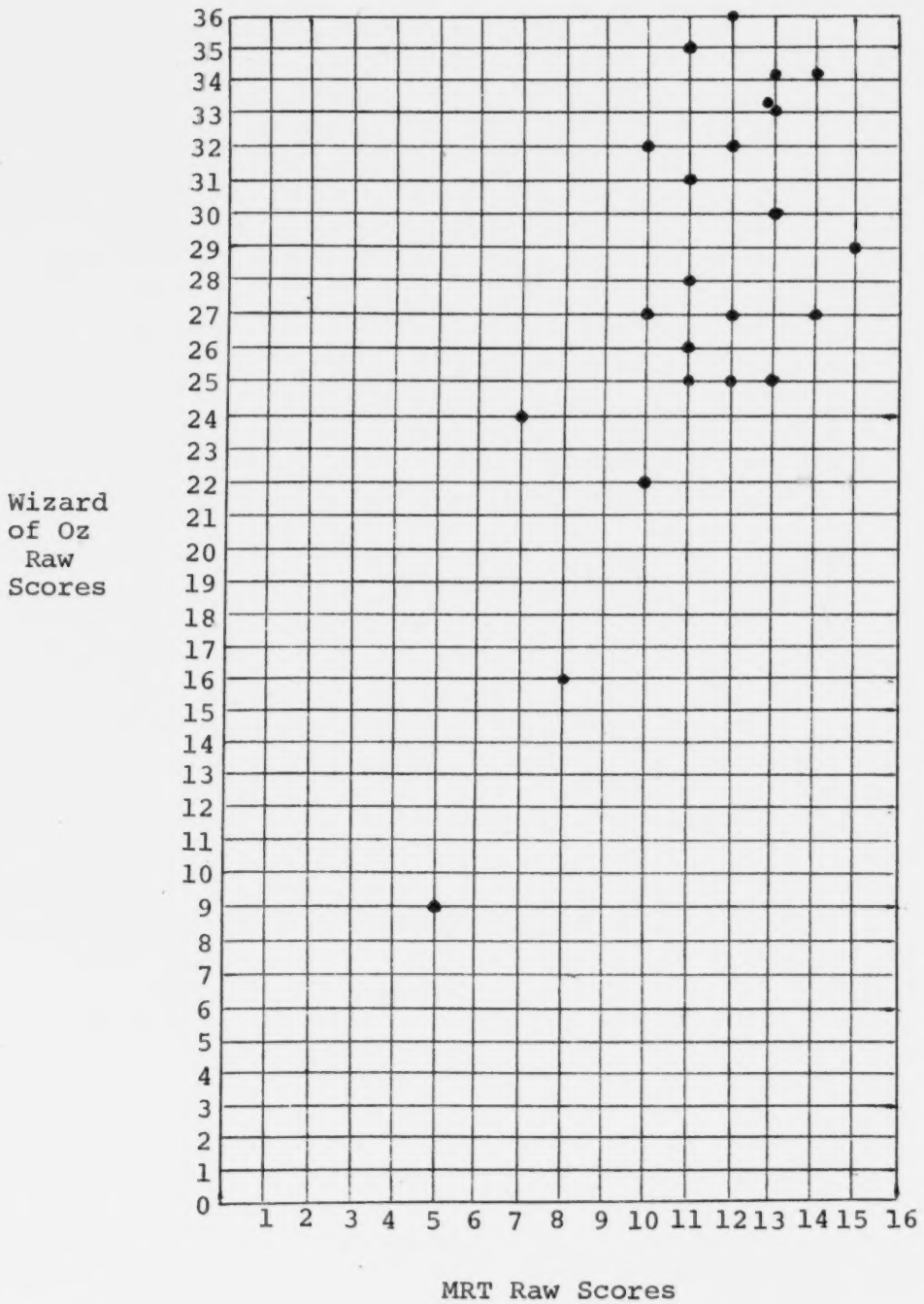


Figure 2

SCATTERGRAM SHOWING TOTAL SCORES

ON EACH INSTRUMENT

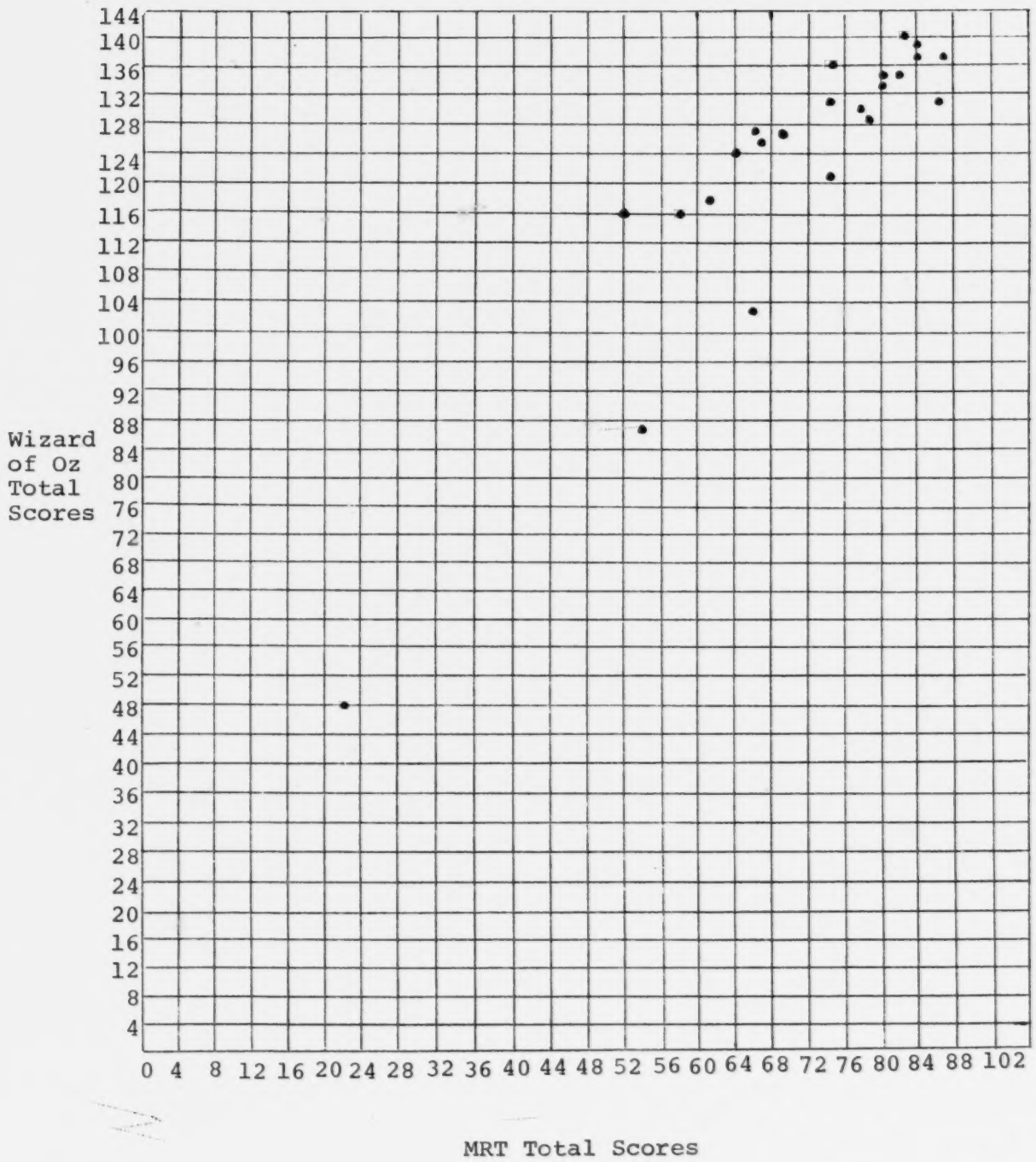


Figure 3

REFERRALS

on the Basis of Screening Scores*

MRT			Screening Batteries				
Rank	Letter Rating	Child	Motor	Visual	Auditory	Language	Total
18.5	B	U	13	35	25	30	103
21	B	M	23	35	25	34	127
24	C	R	25	36	25	32	118
25	C	T	25	34	22	35	116
27	C	V	16	36	16	19	87
28	C	S	24	34	24	34	116
29	E	W	9	18	9	12	48

*Basis for referrals:
Score of 24 or below in any area
Below 120 total score

help such as a learning disabilities expert may offer. His case should be studied further and needs more diagnosis. This is the purpose of the screening instrument. Here is a child who performed well on a pencil and paper test (MRT) in a group situation. Yet on the individual screening he was observed copying forms acceptably using a reversal procedure. Alone, this symptom may merely be a developmental lag, or an erratic occurence. However, when a cluster of symptoms such as those appearing on the motor battery are also present, we need to become alert to the fact that this person presents a possible "high risk" case and thus he is referred for assessment by qualified personnel.

The second case of a B rating in the MRT and a low score in the Wizard of Oz was referred also since all batteries scoring 24 or less call for referral. Since there was no other indication of a problem, the case was referred for observation.

Where a below 24 score occurs in more than one battery, or where all battery scores show deficits, we have a promising case for diagnostic and remedial work.

Chapter 5

SUMMARY, CONCLUSIONS, OBSERVATIONS, SUGGESTIONS FOR FURTHER STUDY

Introduction

Authorities in the field of specific learning disabilities of children have estimated that from five to thirty percent of the school children in the United States suffer from problems related to this field (Edgington, 1966; de Hirsch, 1966; Haring and Ridgway, 1967; McCarthy, 1967; Myklebust, 1968; Crosby and Liston, 1969; Kagan, 1969; Rocky Mountain Educational Laboratory, 1969; Silberberg, 1969 and University City Schools, 1969). New methods have been developed for teaching children with such problems and much research is underway to understand and alleviate learning difficulties.

In several studies children with future academic learning problems have been identified at early ages, usually through the administration of batteries of formal tests by qualified personnel (Mattrick, 1963; Reece, 1966; Haring, 1967; Crichton, 1969; Harckman, 1971; University City, Missouri, 1969 and 1970).

The Wizard of Oz Preliminary Pre-School Screening Program presents a means of assessing learning disabilities

at a very early age, so that further evaluation and remediation may be planned.

The purpose of this study was to compare the Wizard of Oz Screening with a standardized popular academic readiness test. Such a test is the Metropolitan Readiness Test. It has been widely used at kindergarten and first grade levels. The MRT has been shown to be an effective predictor of academic problems (Bilka, 1971; Olson, 1971; Harckman, 1971; University City, 1969, 1970).

Summary of the Study

This study was made to examine the usefulness and validity of the Wizard of Oz Preliminary Preschool Screening Program. Since research and government funding have pointed the way to help learning disabled children in school, much interest has been centered upon preventing development of such disabilities.

In order to establish a prevention program, children must be identified as potentially learning disabled at an early age. The Wizard of Oz Screening Program has been devised for just such early identification.

This screening program was developed by a group of volunteer parents at Arlington, Texas, and used in a clinic setting to screen children who might show signs of learning disabilities. Such children were then referred to pro-

fessional diagnosticians and therapists for further evaluation. More information about the volunteer group and their work was sought but was not made available to this writer.

The author of this study and two trained volunteers screened twenty-three kindergarten children and compared the results with the teacher's results from small-group testing of the same children using the MRT. A very high correlation coefficient was found (0.9075). The level of significance was 0.005 (N=23). The figures showed that the screening program was a valid test in that it correlated with the MRT, a valid and reliable predictor of learning success or failure.

There are advantages to using the Wizard of Oz Screening Program. It is simply constructed and easy to administer and score. Areas of weaknesses and strengths are identified. Children are able to participate in the screening activities at very early ages. The testing is a happy experience without threat, fear or failure to the child. One child or one hundred can be screened equally well. For larger numbers, volunteers are easily trained and each child is tested individually in forty-five minutes time. Meanwhile other children are proceeding through the twenty-four stations. One hundred children might be screened in one day.

Thus the Wizard of Oz Screening Program requires much less testing time per child than a paper and pencil small group testing such as the MRT. The screening activities are enjoyed by the children and the results are meaningful to educational planners. The screening is inexpensive and reusable. School personnel and volunteers can manage the stations and the scoring.

Observations of the Writer

Of all the above mentioned advantages of the Wizard of Oz Screening Program, one which would be difficult to measure is that children of varying ages and development enjoy performing for the Wizard of Oz. The cooperation of the subjects is very high. Little evidence of timidity or anxiety has been displayed by the children participating in this screening program.

The Need for Further Study

Large numbers of children with varied backgrounds should be tested using the Wizard of Oz Screening. Those showing low scores in any battery (auditory, visual, motor or language) or in the total score should be diagnosed using psycho-educational testing procedures. An interesting comparison of the results of the screening with such test scores could be made.

This writer has tested, individually and in small

groups, children of various age levels. Results of screening children at different ages would be a valuable study.

Rating the learning success and failure in subsequent academic years for subjects screened by the Wizard of Oz would show the predictive value of the screening.

Where large numbers of children were screened, those who showed need for referral could later by compared as to benefits from using different remediation and therapy according to demonstrated strengths and weaknesses.

Subtests of the Wizard of Oz Screening should be compared with factors in other tests.

It has been found that several predictive indices appear to be valid indicators of future academic problems (Harckman, 1971). Informal screening has been fairly accurate when performed by experienced kindergarten teachers (Haring and Ridgway, 1967). Simple preventive treatments are not always the answer, however. Type of disability, severity of the deficit and age of the child call for varied educational remediation.

Research is required into finding the most appropriate treatments for each area of deficit. Specialized techniques should be studied using controlled variables. As yet there is no panacea, although various prescriptive methods have shown success in clinics and small groups when

used for remediation of specific disabilities. There are two broad areas for research in the field: that of remediation, and primarily, that of prevention.

Teach children to appreciate
what money cannot buy:
the open air, the beauty of
the earth, the sea, the sky.
We tremble for the children
when the future years we scan--
so let us try to make their
lives as happy as we can.

Gleanings by Patience Strong
(London: Frederick Miller Ltd. 1961)

BIBLIOGRAPHY

BIBLIOGRAPHY

Almy, Millie. "New Views on Intellectual Development in Early Childhood Education," Intellectual Development. Washington, D.C.: Association for Supervision and Curriculum Development, 1964.

Bangs, Tina. Language and Learning Disorders of the Pre-Academic Child. New York: Appleton-Century-Crofts, 1968.

Beery, Keith E. and Buktenica, Norman A. Developmental Test of Visual-Motor Integration. Chicago: Follett Educational Corporation, 1967.

Bereiter, C. E. and Englemann, S. Teaching Disadvantaged Children in the Preschool. Englewood Cliffs, N. J.: Prentice-Hall, 1966.

Bilka, Loisanne. An Evaluation of the Predictive Value of Certain Readiness Measures. (Paper presented at the meeting of the International Reading Association) Atlantic City, New Jersey, April, 1971. ED053869.

Bloom, B. S. Stability and Change in Human Characteristics. New York: Wiley, 1964.

Buktenica, Norman. "An Early Screening and Task-Learner Characteristic Model of Prevention," American Psychological Association, Miami Florida, 1970. ED044436.

Crosby, R. and Robert Liston. "Dyslexia: What You Can-And Can't Do About It." A Grade Teacher Notebook Reprint. Catalog No. 90292. Darien, Connecticut: Teachers Publishing Corporation, 1969.

Cruikshank, W. The Brain-Injured Child in Home, School and Community. Syracuse: Syracuse University Press, 1966.

de Hirsch, Katrina. "Potential Educational Risks," Childhood Education. December, 1964. 4:178-183.

de Hirsch, Katrina. Pre-School Intervention. (Paper prepared for the Interdisciplinary Committee on Reading Problems, Center for Applied Linguistics.) ED057888.

de Hirsch, Katrina, Jansky, Jeannette and Langford, William S. Predicting Reading Failure. New York: Harper and Row, 1966.

Deutsch, Martin, Irwin Katz, and Arthur R. Jenson. Social Class, Race and Psychological Development. Holt, Rinehart, Winston, 1968.

Durrell, D. D. Durrell Analysis of Reading Difficulty. New York: Harcourt, Brace and World, Inc., 1955.

Edgington, Ruth. "Public School Programming for Children With Learning Disabilities." Academic Therapy Quarterly II (Winter, 1966-67), 166ff.

Frostig, Marianne and D. Horne. Frostig Program for Development of Visual Perception: Teachers' Guide. Chicago: Follett, 1964.

Hahn, H. T. "Three Approaches to Beginning Reading Instruction." The Reading Teacher, 19:590-594, 1966.

Hainsworth, Peter K. Development of Psychoneurologically-Oriented Screening Tests and Curriculum for the Disadvantaged Preschool Child. Meeting Street School. Providence, Rhode Island, 1969. ED038465.

Hammil, Donald and Lafayette S. Powell. "A Screening Device for Early Detection of Emotional Disturbance in a Public School Setting." Exceptional Children, May, 1967, p. 648.

Harckman, Laura D. Multiple Prediction of Reading Achievement in Grades One Through Four Using Kindergarten Measures. (Paper Presented at the Annual Meeting of the American Educational Research Association.) New York, February, 1971. ED049311.

Haring, N. and R. Ridgeway. "Early Identification of Children With Learning Disabilities." Exceptional Children, 1967. 33:387-395.

Haring, N. and R. Schiefelbusch. Methods in Special Education. New York: McGraw-Hill, 1967.

Hildreth, Gertrude H., Nellie L. Griffeths, and Mary E. McGauvran. Metropolitan Readiness Tests. New York: Harcourt, Brace, and World, 1965.

Hiroshen, Alfred. "A Comparison of the Predictive Validity of the Revised Stanford-Binet Intelligence Scale and the Illinois Test of Psycholinguistic Abilities," Exceptional Children, XXXV (March, 1969), 517-521.

Hopkins, Kenneth D. and E. George Sitkei. Predicting Grade One Reading Performance--Intelligence vs. Reading Readiness Tests. (Paper presented at the American Educational Research Association Meeting.) New York City, February, 1967. EDO12675.

Ilg, F. L. and L. B. Ames. School Readiness. Behavior Tests, Gesell Institute. New York: Harper and Row, 1965.

Jensen, Arthur. "How Much Can We Boost IQ and Scholastic Achievement," Harvard Education Review. 39:1-123, 449-83. Winter, Summer, 1969.

Jansky, J. The Prediction of Reading Failure for a Heterogeneous Group. (Paper presented to the Orton Society.) October, 1969.

Jastak, J. E. and S. R. Jastak. The Wide Range Achievement Test. Wilmington, Delaware: Guidance Associates, 1965.

Kagan, Jerome. "Dyslexia and Its Remediation." Reading Forum. NINDS Monograph No. 11, 1969, p. 56.

Kelly, Ingak. The Effects of Differentiated Instruction in Visual-Motor Skills on Development Growth and Reading Readiness at Kindergarten Level. Washington State University, Pullman. August, 1971. EDO53821.

Kephart, N. C. The Slow Learner in the Classroom. Columbus, Ohio: Merrill, 1960.

Kirk, S. and J. McCarthy. The Illinois Test of Psycho-Linguistic Abilities. Urbana, Illinois: University of Illinois Press, 1961.

Mattuck, W. E. "Predicting Success in the First Grade," Elementary School Journal. 63:273-276, 1963.

McCarthy, Jeanne. "How to Teach the Hard to Reach." Grade Teacher Magazine. May-June, 1967.

Minskoff, J. Gerald. "Understanding Learning Disabilities," Reading Forum. National Institute of Neurological Diseases and Stroke. U. S. Department of Health, Education and Welfare, Bethesda, Maryland, 1971.

Montessori, Maria. The Montessori Method. New York: Strokes, 1912.

Myers, Patricia I. and Donald L. Hammil. Methods for Learning Disorders. New York: Wiley, 1969.

Myklebust, H. R. Auditory Disorders in Children. New York: Grune and Stratton, 1954.

Myklebust, H. R. Progress in Learning Disabilities. Vol. 1 New York: Grune and Stratton, 1968.

Myklebust, H. R. Picture Story Language Test. New York: Grune and Stratton, Inc., 1965.

National Advisory Committee on Handicapped Children. First Annual Report to the United States Subcommittee on Education. Committee on Labor and Public Welfare. January, 1968.

Olson, Arthur V. and Carl L. Rosen. Exploration of the Structure of Selected Reading Readiness Tests. (Paper presented at the meeting of the American Educational Research Association), New York, February, 1971. ED050895.

Piaget, Jean. The Origins of Intelligence in Children. New York: International Universities Press, 1952.

Reece, William K. Identification and Evaluation of Characteristics of Kindergarten Children That Foretell Early Learning Problems. Summary and Final Report. University of Southern California, November, 1966. ED020-006 and ED020-007.

Reger, Roger (ed.) Pre-School Programming of Children With Learning Disabilities. Springfield, Thomas, 1970.

Roach, E. G. and N. C. Kephart. The Purdue-Perceptual Motor Survey. Columbus, Ohio: Merrill, 1966.

Rocky Mountain Educational Laboratory. Individual Learning Disabilities Program; Pilot Incidence Study, Volume I, II, and III. Technical Report. Greeley, Colorado. August, 1969. ED032688.

Spache, G. D. Diagnostic Reading Scale Examiner's Manual--Examiners Record Booklet. Monterey, California: McGraw-Hill Book Co., 1963.

Silberberg, Norman and Margaret Silberberg. "The Bookless Curriculum: An Educational Alternative." Journal of Learning Disabilities. Vol. 2. No. 6. June, 1969. p. 10.

Templin, M. C. and Darley, F. L. The Templin-Darley Tests of Articulation. Iowa City: University of Iowa Press, 1960.

University City School District. Early Education Screening Test Battery of Basic Skills Development. A Study of Test Selection, University City School District, University City, Missouri. January, 1969. ED043684.

University City School District. Prediction of Achievement in the First Primary Year. University City School District, University City, Missouri. December, 1969. ED044-180.

University City School District. Primary Mental Abilities and MRT as Predictors of Achievement in the First Primary Year. University School District, University City, Missouri. June, 1970. ED043683.

University City School District. Review of Selected Early Education Research in the School District of University City, Missouri. June, 1970. ED044-182.

Vygotskii, Lev Semenovich. Thought and Language. Cambridge: MIT Press, Massachusetts Institute of Technology, 1962.

Wechsler, D. Wechsler Intelligence Scale for Children: Manual. New York: The Psychological Corporation, 1955.

APPENDICES

APPENDIX A

Wizard of Oz Screening Deviation
From the Mean

(23) Mean = 122.78

Rank	Individual Raw Score		Deviation from Mean
1	140		+17.217
2	139		+16.217
3.5	137		+14.217
	137		+14.217
5	136		+13.217
6.5	134		+11.217
	134		+11.217
8	133		+10.217
9.5	131		+ 8.217
	131		+ 8.217
11	130		+ 7.217
12	129	Median Score 129.000	+ 6.217
13.5	127		+ 4.217
	127		+ 4.217
15	126		+ 3.217
16	124	Mean Score 122.78260	+ 1.217
17	121		- 1.783
18	118		- 4.783
19.5	116		- 6.783
19.5	116		- 6.783
21	103		-19.783
22	87		-35.783
23	48		-74.783

MRT Deviation from the Mean

(23) Mean = 70.26

Rank	Individual Raw Score		Deviation from the Mean
1	87		+16.74
2	86		+15.74
3.5	84		+13.74
3.5	84		+13.74
5	83		+12.74
6	81		+10.74
7.5	80		+ 9.74
7.5	80		+ 9.74
9	78		+ 7.74
10	77		+ 6.74
11.5	74		+ 3.74
11.5	74	Median Score	+ 3.74
13	73		+ 2.74
14	69	Mean Score 70.26	- 1.26
15.5	66		- 4.26
15.5	66		- 4.26
17	65		- 5.26
18	64		- 6.26
19	61		- 9.26
20	58		-12.26
21	53		-17.26
22	52		-18.26
23	21		-49.26

RANK ORDER OF RAW SCORES
IN EACH INSTRUMENT

Child	W. of OZ	MRT
A	1	5
B	2	3.5
C	3.5	3.5
D	3.5	1
E	5	11.5
F	6.5	7.5
G	6.5	6
H	8	7.5
I	9.5	2
J	9.5	13
K	11	10
L	12	9
M	13.5	17
N	13.5	14
O	15	15.5
P	16	18
Q	17	11.5
R	18	19
S	19.5	22
T	19.5	20
U	21	15.5
V	22	21
W	23	23

RANK ORDER OF SCREENING RAW SCORES

Child	W of O_z Rank	W of O_z Total Raw Score	MRT Rank	MRT Total Raw Score
A	1	140	5	83
B	2	139	3.5	84
C	3	137	3.5	84
D	4	137	1	87
E	5	136	11.5	74
F	6	134	7.5	80
G	7	134	6	81
H	8	133	7.5	80
I	9	131	2	86
J	10	131	13	73
K	11	130	10	77
L	12	129	9	78
M	13	127	17	65
N	14	127	14	69
O	15	126	15.5	66
P	16	124	18	64
Q	17	121	11.5	74
R	18	118	19	61
S	19	116	22	52
T	20	116	20	58
U	21	103	15.5	66
V	22	87	21	53
W	23	48	23	21

AGE, RAW SCORE AND RANK FOR
MRT AND SCREENING TEST

Age	Child	MRT		SCREENING TEST	
		Raw Score	Rank	Raw Score	Rank
6-7	N	69	14	127	13.5
6-7	B	84	3.5	139	2.
6-6	F	80	7.5	134	6.5
6-6	E	74	11.5	136	5
6-5	D	87	1	137	3.5
6-5	C	84	3.5	137	3.5
6-5	G	81	6	134	6.5
6-5	M	65	17	127	13.5
6-5	R	61	19	118	18
6-3	L	78	9	129	12
6-3	U	66	15.5	103	21
6-3	T	58	20	116	19.5
6-3	K	77	10	130	11
6-1	A	83	5	140	1
6-1	J	73	13	131	9.5
6-0	Q	74	11.5	121	17
5-11	I	86	2	131	9.5
5-11	O	66	15.5	126	15
5-11	V	53	21	87	22
5-10	S	52	22	116	19.5
5-8	H	80	7.5	133	8
5-8	P	64	18	124	16
5-8	W	21	23	48	23

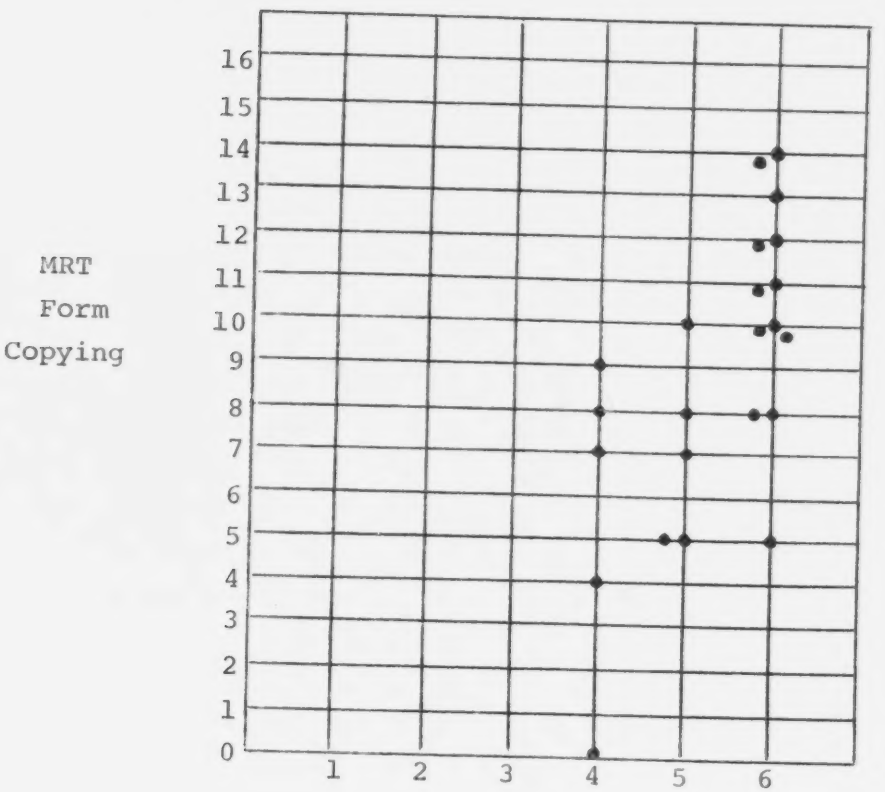
MRT LISTENING SUBTEST RAW SCORES
AND SCREENING AUDITORY BATTERY
RAW SCORES AND PERCENT CORRECT

	MRT Listening		Auditory Battery	
Child	Raw Score	Percent Correct	Raw Score	Percent Correct
D	12	75 %	36	100 %
I	14	87.5%	27	75 %
C	13	81.5%	33	91.666%
B	13	81.5%	34	94.444%
A	13	81.5%	33	91.666%
G	12	75 %	27	75 %
F	14	87.5%	34	94.444%
H	11	68.7%	35	97.222%
L	15	93.75%	29	80.555%
K	12	75.0 %	32	88.888%
E	10	62.5 %	32	88.888%
Q	11	68.7 %	28	77.777%
J	11	68.7 %	31	86.1 %
N	13	81.5 %	30	83.333%
U	11	68.7 %	25	69.444%
O	10	62.5 %	27	75.0 %
M	13	81.5 %	25	69.444%
P	10	62.5 %	26	72.222%
R	12	75 %	25	69.444%
T	10	62.5 %	22	61.111%
V	8	50 %	16	44.444%
S	7	43.55%	24	66.666%
W	5	31.25%	9	25.0 %

SCATTERGRAM SHOWING RAW SCORES

ON MRT COPYING SUBTEST AND W OF OZ

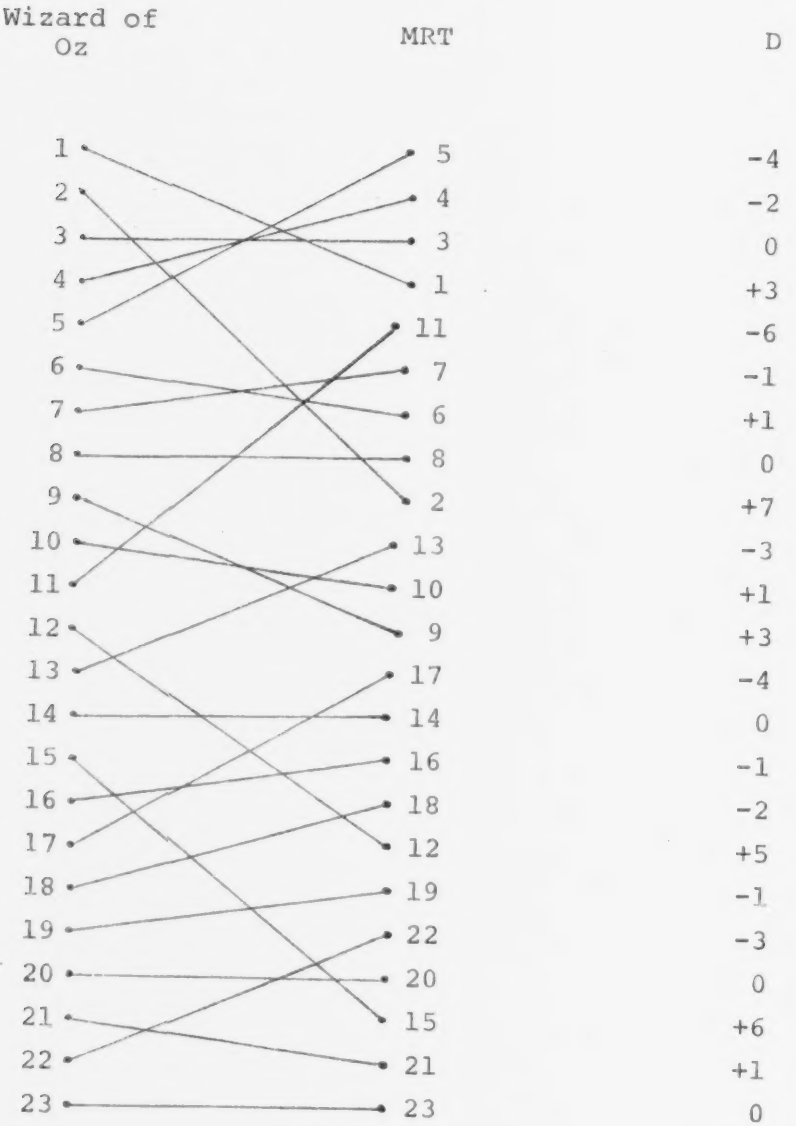
VISUAL-MOTOR SUBTEST



GIRLS AND BOYS RAW SCORES
FOR EACH INSTRUMENT

BOYS			GIRLS		
Child	W of Oz	MRT	Child	W of Oz	MRT
C	137	84	A	140	83
L	129	78	B	139	84
M	127	65	D	137	87
O	126	66	E	136	74
P	124	64	F	134	80
R	118	61	G	134	81
T	116	58	H	133	80
U	103	66	I	131	86
V	87	53	J	131	73
W	48	21	K	130	77
			N	127	69
			Q	121	74
			S	116	52

COMPARISON OF RAW SCORE RANK IN EACH INSTRUMENT



Rank	Name	Boy or Girl	CA	Motor	Visual Score	Auditory	Language	Total
1	A	G	6-1	35	36	33	36	140
2	B	G	6-7	33	36	34	36	139
3.5	C	B	6-5	36	36	33	32	137
3.5	D	G	6-5	29	36	36	36	137
5	E	G	6-6	34	35	32	35	136
6	F	G	6-6	29	35	34	36	134
7.5	G	B	6-5	36	35	27	36	134
7.5	H	G	5-8	28	36	35	34	133
9.5	I	G	5-11	34	36	27	34	131
9.5	J	G	6-1	30	36	31	34	131
11	K	G	6-3	35	36	32	32	130
12	L	B	6-3	32	34	29	34	129
13.5	M	B	6-5	23	35	25	34	127
13.5	N	G	6-7	26	36	30	35	127
15	O	B	5-11	30	34	27	35	126
16	P	B	5-8	25	34	26	35	124
17	Q	G	6-0	28	34	28	31	121
18	R	B	6-7	25	36	25	32	118
19.5	S	G	6-5	24	34	24	34	116
19.5	T	B	6-3	25	34	22	35	116
21	U	B	6-3	13	35	25	30	103
22	V	B	5-11	16	36	16	19	87
23	W	B	5-8	9	18	9	12	48

Screening Test

Battery Subtests Scores

Metropolitan Readiness Tests

NAME	BOY OR GIRL	CA	SCORE						TOTAL	%ILE RANK	LETTER RATING
			1. Word Meaning	2. Listening	3. Matching	4. Alphabet	5. Numbers	6. Copying			
1. D	G	6-5	13	12	13	16	19	14	87	99	A
2. Y	B	6-6	12	12	12	16	22	13	87	99	A
3. I	G	5-11	9	14	13	16	20	14	86	99	A
4. C	B	6-5	14	13	12	15	17	13	84	98	A
5. B	G	6-7	12	13	11	15	21	12	84	98	A
6. A	G	6-1	12	13	11	15	20	12	83	97	A
7. G	G	6-5	13	12	14	14	18	10	81	96	A
8. F	G	6-6	8	14	12	15	21	10	80	95	A
9. H	G	5-8	13	11	13	15	17	11	80	95	A
10. X	G	6-6	13	12	12	14	18	10	79	94	A
11. L	B	6-3	11	15	9	15	20	8	78	93	A
12. K	G	6-3	11	12	14	16	19	5	77	92	A
13. CC	G	5-11	12	12	12	16	16	9	77	92	A
14. E	G	6-6	12	10	12	14	15	11	74	88	B
15. Q	G	6-0	11	11	13	15	14	10	74	88	B
16. J	G	6-1	13	11	9	15	17	8	73	86	B
17. Z	G	6-1	9	10	12	15	16	10	72	84	B
18. N	G	6-7	12	13	10	12	14	8	69	79	B
19. U	B	6-3	14	11	9	12	11	9	66	73	B
20. O	B	5-11	14	10	8	15	12	7	66	73	B
21. M	B	6-5	10	13	9	11	17	5	65	71	B
22. BB	B	6-0	10	9	7	15	14	9	64	69	B
23. P	B	5-8	10	10	7	15	15	7	64	69	B
24. R	B	6-5	11	12	8	8	12	10	61	63	C
25. T	B	6-3	13	10	7	14	10	4	58	57	C
26. AA	B	6-0	7	13	10	14	8	5	57	55	C
27. V	B	5-11	6	8	10	12	9	8	53	46	C
28. S	G	5-10	5	7	10	12	13	5	52	44	C
29. W	B	5-8	6	5	4	3	3	0	21	5	E

APPENDIX B

A PRELIMINARY SCREENING PROGRAM TO IDENTIFY FUNCTIONING STRENGTHS AND WEAKNESSES IN PRESCHOOL CHILDREN

PURPOSES

INSIGHT into the strengths and weaknesses in motor, visual, auditory and language functioning of individual preschool children so that appropriate early education experiences can build the pattern of functioning to optimal level before formal academic work is begun.

IDENTIFICATION of children whose patterns of functioning suggest the need for immediate referral and therapy in an area of weakness.

SOURCES

The tests within the preliminary screening program were designed specifically for the "Wizard of Oz" theme. Among other sources for standardized evaluation batteries are The Illinois Test of Psycholinguistic Ability; the Ilg and Ames Readiness Battery; the deHirsch Predictive Index; the Frostig Visual Perception Test; the Spriggle Readiness Battery; and the Kephart norms.

AREAS EVALUATED

MOTOR — Imitation of movement; Developmental movement patterns; understanding and extension of body parts; right-left awareness; spatial relationships; and body image.

VISUAL — Using the eyes together; tracking; fusion; visual discrimination; visual memory; visualmotor coordination; figure-ground discrimination.

AUDITORY — Discrimination; auditory memory; relating appropriate meaning to what is heard; remembering the sequence of what is heard; auditory-motor matches.

LANGUAGE — Receptive language; inner language concepts and categorization; expressive language - both verbal and non-verbal motor encoding.

THEME: THE WIZARD OF OZ

SETTING: Each child follows a yellow brick (Contact Paper) road to play games at 24 stations along the way, presenting his Admission Ticket to a person at each station so that it can be marked with his score on each game.

STATIONS:

THE FOLKS IN KANSAS - Registration, Story-Telling

THE SCARECROW'S FRIENDS - Motor Battery Area

THE TIN MAN'S FRIENDS - Auditory Battery Area

THE LION'S FRIENDS - Visual Battery Area

FRIENDS IN OZ - Language Battery Area

THE WIZARD'S SURPRISE - Check out station

PROCEDURES: The children take their tickets along the road from one test station to another presenting them to the person at each station who will record the results of the games as they play giving 1 for items done correctly and 0 for incorrect items.

The test teams, preferably two at each station, administer the questions or activities precisely according to the instructions on their card. Extra trials, clues, examples, or other forms of assistance should NOT be given and would invalidate the results obtained. One person should administer the test while a second person records the results.

Additional Guides, teen-agers or mothers, are recommended to direct the children from one test station to another, to assist them in locating restrooms and to detain children momentarily when a test area is still occupied.

The check-out station should be staffed by a team able to scan total results and suggest to parents where referrals are indicated. The Land of Oz Admission Ticket is retained in the Screening Program files and a result slip is given to the parent:

PRESCHOOL PRELIMINARY SCREENING
RESULTS

Adequate or above strengths: ____ Motor
____ Visual
____ Auditory

SCORING AND INTERPRETATION: Each test item scores one point, with a maximum of six points for correctly performing all six items on a single test. Maximum score in each battery area (Motor, Visual, Auditory, Language) is 36 points, with maximum score for perfect performance in all four functioning areas is 144 points.

The points achieved are not equivalent to IQ scores but merely serve as indications of strengths and weaknesses in areas of functioning. Generally, a score of 4 or ablve on a single test indicates adequate functioning on that specific test. A score of 30 or above in an area of functioning (Motor, Visual, Auditory, or Language) suggests adequate functioning in that area as a whole. A total screening score of 120 or above should indicate sufficient strengths to experience success in learning tasks at first grade level.

Certain combinations of deficiencies, even when the total score is adequate or above, may suggest the need for specific referrals or specialized training to strengthen an area of weakness which might otherwise block successful learning. Observations on the child's behavior during the screening may further suggest the need for a referral, such as with the hyperactive or autistic child, though these conditions are usually reflected in subtest performance.

REFERRALS: Children whose functioning in an area falls below 24 points should be referred for professional evaluation to determine whether the child was merely failing to perform on the preliminary battery up to his potential or whether an actual dysfunction exists of sufficient severity to block success at learning.

While both the type of functioning deficiency and the geographical location of the screening program will determine where professional evaluations may be secured by competent specialists, most towns have listings of United Fund Agencies, Mental Health and Crippled Children Centers, and possibly, University Centers where testing is available. Consult the yellow pages of your telephone book.

OTHER RECOMMENDATIONS: Make plans for a SCREENING COMMITTEE with representatives from local schools, preschool PTA's, the press, and physicians. Plan for COMMUNITY COOPERATION by making your plans known through letters,programs, and the news media to local community groups whose volunteers or whose funds may assist in the screening or in the costs of follow-up referrals. Plan for TRAINING SESSIONS for the teams who are to do the testing and insist on their attendance. Work for FOLLOW - Up PROGRAMS to assist the children identified with areas of weakness either through the regular public schools or through cooperative ACLD endeavors of parents and professionals in your community. Include TEACHER IN-SERVICE training for regular classroom teachers to assist them in understanding the child with special learning needs. If sufficient funds exist, place materials in the local library to help parents whose children have been identified as needing further testing or therapy. Remember that the scores are NOT IQ scores and that the screening is a PRELIMINARY assessment of possible strengths and weaknesses which may relate to future success in learning tasks at the first grade level. This tool can neither DIAGNOSE nor PREDICT but rather points to areas where diagnosis is needed.

TESTING KIT: A Testing Kit, experimental edition, which includes an explanatory tape can be obtained from Mid-Cities Council, P. O. Box 1191, Arlington, Texas 76010. The kit includes individual test cards, 25 test admission tickets and a copy of this pamphlet for a cost of $12.00.

Scoring criterion:

There is a total of 36 points possible for each of the four sections of the test. A cumulative score of 120 or above indicates sufficient strength to be able to progress nicely in academic subjects. This score is not to be equated with I.Q.. On a particular subtest a score of 24 or below would indicate a need for referral and professional evaluation.

Total test time per student is about 45 min.
24 different testing stations may be set up and the use of older students is allowable.
Give the student one trial. Do not help him to get it right by giving hints or clues. Items may be repeated where this is so indicated on the test.

LAND OF OZ
ADMISSION TICKET

MOTOR BATTERY	a	b	c	d	e	f
1. Imitation						
2. Movement						
3. Body Parts						
4. Spatial Relationships						
5. Right-Left						
6. Incomplete Man						
Total _____						

VISUAL BATTERY	a	b	c	d	e	f
7. Tracking						
8. Fusion						
9. Visual-Discrimination						
10. Visual-Memory						
11. Visual-Motor						
12. Figure-Ground						
Total _____						

AUDITORY BATTERY	a	b	c	d	e	f
13. Discrimination						
14. How Many?						
15. Copy Cat						
16. Sequence						
17. Association						
18. Guess What I Am						
Total _____						

LANGUAGE BATTERY	a	b	c	d	e	f
19. Motor Encoding						
20. Vocal Encoding						
21. Categories						
22. Go togethers						
23. Articulation						
24. Conversation						
Total _____						

CHILD'S NAME _____ BIRTHDATE: _____

ADDRESS: _____ SCHOOL: _____ RESULTS: _____

REFERRALS: _____ FOLLOW-UP: _____

PRESCHOOL PRELIMINARY SCREENING RESULTS

ADEQUATE OR ABOVE STRENGTHS: _____ MOTOR
_____ VISUAL
_____ AUDITORY
_____ LANGUAGE

_____ REFERRAL _____ NON-REFERRAL

WIZARD OF OZ KIT

List of Contents:

1 toy xylophone

1 toy harmonica

1 toy hammer

1 toy screwdriver

1 toy lipstick

1 scissors

toy balloons

1 pencil

1 toy ring in box

1 florist "bee" or
toy bee, attached to
eraser end of pencil.

You will also need:

masking tape

yardstick

small bag of candy

paper and pencil for Draw-a-Man test.

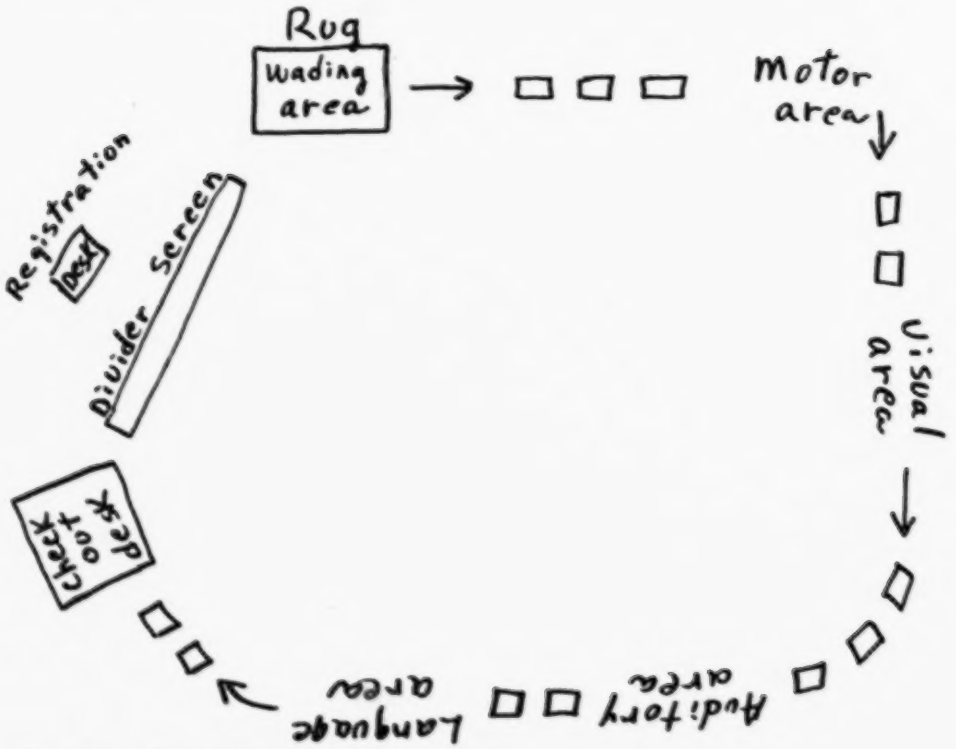
a recording of songs from "The Wizard of Oz"

yellow contact paper for a few bricks from the yellow brick road

Motor Battery

Equipment needed		In Kit	Extra item
Test 1.	none		
Test 2.	Masking tape	x	
Test 3.	none		
Test 4.	Two chairs		x
	yardstick		x
Test 5.	none		
Test 6.	Pencil, paper		x

(follow yellow brick road to each test area)



Sources for further Reading:

Cratty, B. Movement Behavior and Motor Learning. Philadelphia: Lea and Febiger, 1964.

Godfrey, B.B. and Thompson, M.K. Movement Patterns Checklist. Columbus: University of Mo., 1966.

Goodenough, F., The Measurement of Intelligence by Drawing. Yonkers on Hudson: World Book, 1962.

Ilg, F.L. and Amer, L.S. School Readiness. N.Y.: Harper and Row, 1964.

Kephart, N. The Slow Learner in the Classroom. Columbus: Merrill Co. 1960.

Perception Development Research Assoc. A Motor Perceptual Development Handbook

Visual Battery

Equipment needed	In kit	Extra
Text 7. Bee	x	
Test 8. Bee	x	
Test 9. Card	x	
Test 10. Card	x	
Test 11. Card	x	
Test 12. Card	x	

Sources for further reading:

Benton, A.L. Revised Visual Retention Test. New York: Psychological Corp., 304 E. 45th, 1955.

Clauson, A. Bender Visual Motor Gestalt Test. Western Psychological Services, 12035 Wilshire, Los Angeles, 1962.

Frostig, M. Developmental Tests of Visual Perception. Follett Pub. Co., 1961

Getman, G.N. and Kane, E.R. Physiology of Readiness. Box 1004, Minneapolis, Minn., 1964.

Winterhaven Lions Club. Perceptual Training Forms Manual. 141 W. Central Avenue, Winter Haven, Florida, 1959.

Alternative tests

If available, the services and specialized equipment of a visual professional may be substituted for the first two tests of this battery. Also, a Snellan acuity test should have been administered by the child's pediatrician or nurse during regular physical check-ups. If this has not been done, the acuity test might be added to the battery.

Auditory Battery

Equipment needed	In kit	Extra
Test 13. xylophone	x	
Test 14. xylophone	x	
Test 15. xylophone	x	
Test 16. characters and mat	x	
Test 17. none		
Test 18. none		

Sources for further reading.

Kirk, S. Illinois Test of Psycholinguistic Ability. Urbana; University of Illinois.

Myklebust, H.R. Auditory Disorders: A Manual. New York, Grune and Stratton, 1954.

Wepman, J.M. Auditory Discrimination Test. Chicago: 950t. 59th, 1958.

Suggestions:

The Auditory Battery should be given in the quietest, least distracting area of the test environment. The use of separate rooms, rugs, partitions, and background sound controls should be considered.

Additional Test:

If the traditional audiometric acuity evaluation has not been given by the pediatrician or nurse, this might be added to the battery, although total test time will be lengthened. Be certain a recently calibrated audiometer with trained operator is used if this test is given.

Language Development Battery

Equipment needed	In Kit	Extra
Test 19. Bag of items	x	
Test 20. Sack, candy	x	
Test 21. None		
Test 22. Card	x	
Test 23. None		

Sources for further reading:

Bruner, J.S. Studies in Cognitive Growth. N. Y. John Wiley and Sons, 1966. (Also recent articles in Saturday Review.)

Deliirsch, K., Jansky, J.J., and Langford, W.S. Predicting Reading Failure: A Preliminary STudy. N.Y.: Harper and Row, 1966.

Dunn, L.A., Peabody Picture Vocabulary Test. N.Y.: American Guidance Service.

Suggestions:

If possible, the last two tests should be given by a trained speech therapist as a member of the screening team.

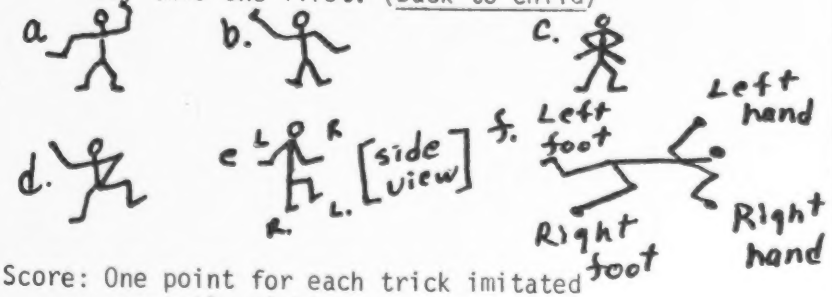
Check Out procedure:

Following test 24, a check-out desk should tally scores and fill in referral blank as indicated on Screening Brochure. You may wish to have a surprise from the Wizard's bag as he completes the testing.

The Screening Test Blank is retained by the Screening team and the results slip only given to the child or his parents.

Motor Battery -1 — Imitation

Say: Watch these scarecrow tricks.
See how quickly your body can do them.
Try this one first. (Back to child)



Score: One point for each trick imitated correctly within ten seconds.

Motor Battery -2 — Movement

Say: The Scarecrow wants to move like people.
Show him how to do these things.

a. Walk the tape frontwards (heel to toe)
b. Walk the tape backwards (toe to heel)
c. Put one foot on each side of the tape and jump with both feet to the end.
d. Hop along the tape on one foot to the end.
e. Come back, hopping on the other foot.
f. Skip around the tape.

You may demonstrate.
Score: No score if child steps off, loses balance, waves arms excessively, or cannot skip more than once in each subtest.
Score one point if only one error or no errors are made per subtest.

Motor Battery -3 — Body Parts

Say: Help the scarecrow learn where his body parts are.
Show him where these parts are. Use both hands.
Do not demonstrate -

a. Touch your eyes
b. Touch your knees
c. Touch your shoulders.
d. Touch your elbows.
e. Touch your heels.
f. Touch your hips or waist

Score: One point for each pair of body parts touched correctly. 1/2 point if only one of the pair is touched.

Motor Battery -4 — Spatial relationships

Say: Play like this yardstick and these chairs are a fence. Show the scarecrow how to do some more tricks with the fence.

a. stand with your back to the fence.
b. step over the fence without touching it.
c. go under the fence without touching it.
d. put your hands above the fence.
e. move away from the fence.
f. go around the fence.

Score: One point for each item done correctly without hesitation or touching.

Motor Battery -5 Right-Left

Say: Show the Scarecrow some right-left tricks.
a. Put your right hand up high.
b. Put your left foot out in front of you.
c. Put your left arm behind you.
d. Lift your right foot up.
e. Put your left hand on your right ear.
f. Put your right elbow on your left knee.
You may repeat one time if the child asks!

Score: One point for each right-left trick done correctly. Both parts of items e and f must be done for the point score.
Do not Demonstrate.

Motor Battery -6 Draw-a-person

Say: Draw a picture of your self for the Scarecrow.
Draw your whole self- all of you.

Score: One point for each of these body parts drawn in any order:
arms
legs
head and eyes - 1
ear
neck
any other detail
Needs plenty of time - maybe in waiting area -

Visual Battery -7 Tracking

Say: A buzzing bee kept bothering the Lion. Play Like you are the Lion. Keep your eyes right on the bee without moving your head. Just watch him with your eyes.

a. b. c.

d. e. f.

Score: One point for pattern followed three times. without losing target. No score if head moves with the eyes.

Visual Battery -8 Visual Discrimination

Say: Keep watching the bee. Keep your eyes right on him.
a. near
b. far
c. near
d. far
e. near
f. far

Score: One point for each item on which eyes hold on and focus upon bee, as it moves toward and away from their midpoint.

Alternate Test: Professional equipment to evaluate convergence and fusion may be substituted if available.

Visual Battery -9 Visual Discrimination

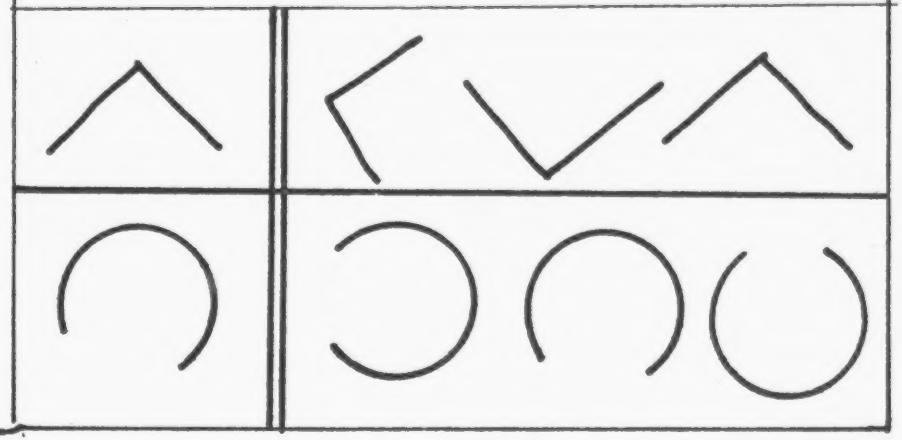
Say: Here is a picture of our Lion friend. And here is a game with some of his parts. See this part. Which one is just like it?

a. b. c.

d. e. f.

Score: One point for each discrimination. First response must be correct to score.

Visual Battery 9 Discrimination Card a. b.



Visual Battery -10 Visual-Memory

Say: See this. (After 5 seconds, cover card)
Now, which one is just like it.

Score: One point for each correctly chosen item.

Visual Battery -11 Visual Motor

Say: Now it's your turn to draw some shapes.
Draw one that looks just like this.

a. b. c.

d. e. f.

Score: One point for each correctly reproduced with no ommission of parts.

Visual Battery -12 Figure Ground

Say: See the Lion's face. (Trace with finger)
It is in the shape of a circle. (Show circle)
How many more circles can you find?
Trace each one with your finger.

Score: One point for each circle entirely traced without hesitation.

Auditory Battery -13 Discrimination

Say: The Tin Man was made out of old pipes and pieces of metal. Pipe and metal makes a sound when you hit it. Listen.
(Demonstration) These sound the same: g-g
These sound different: d-g
(Put xylophone out of sight)
Listen again. Are these the same or different:

a. e-e (same)
b. g-g (same)
c. a-e (different)
d. a-a (same)
e. d-g (different)
f. e-f (different)

Score: One point for each correct discrimination.

Auditory Battery -14 How many?

Say: Listen. Play like the Tin Man is tapping his foot. (Make taps under the table) How many taps do you hear?

a. 2
b. 1
c. 4
d. 3
e. 7
f. 9

Score: One point for each accurate response.

Auditory Battery -15

Say: Listen. The Tin Man wants you to tap back the same way he taps. Listen first - then do it.
(. = short — = long)

a. . .
b. . .
c. _ _ ...
d. _ _ _ .
e. . . - . . -
f. - . . - ___

Score: One point for each pattern correctly done, including short and long as well as total number of taps.

Auditory Battery -16 Sequence

Say: This is the girl. (Show each one)
This is the Tin Man.
This is the Lion.
This is the Scarecrow

Listen closely. When I call their names, put them in front of you. Keep them just like I call them.

a. Tin Man, Girl
b. Lion, Girl, Tin Man
c. Girl, Lion, Scarecrow
d. Tin Man, Lion, Girl, Scarecrow
e. Lion, Scarecrow, Girl, Tin Man
f. Scarecrow, Girl, Tin Man, Lion

Score: One point if in correct sequence, left to right in front of the child. Repeat if distractions only.

Auditory Abilities -17 Association

Say: The Tin Man is learning about Real Live Persons with skin and bones- like we are. Let's tell him some of the things persons know. I'll start and you finish:

a. Read persons sit in chairs and sleep on _____.
b. Persons sleep at night and are aware during the_____.
c. Some persons are men and others are _____.
d. Some persons are tall and some are _____.
e. Some persons are young and others are _____.
f. Some old persons move slowly and young persons move more _____.

Score: One point for each appropriate analogy.
a. (beds, cots, couches, sofas)
b. (day, morning)

(over)

Auditory Abilities -17 Association

c. (women, girls, ladies)
d. (short)
e. (old)
f. (quickly, fast)

Looking for opposites -- score if it is an appropriate answer.

Auditory Battery -18 Guess What I Am?

Say: Here's one of the Tin Man's guessing games. Listen to all the clues. Then put them together and guess what it is. No Repeats.

a. I am not living. I have hands and numbers on me. I make a tick tock sound. What am I?
b. I am a living thing. I have four legs. My sound is a bark. I am a pet. What am I?
c. I am not living. I am something you drink. I come from cows. What am I?
d. I am not living. I am a machine. People watch me and listen to me. I have commercials too. What am I?

(over)

Auditory Battery -18 Guess What I Am? 69

e. I am not living. I am white on the outside. I have a shell. You sometimes eat what is inside of me. What am I?
f. I am not living. I am a machine in your kitchen. I keep things cold. What am I?

a. clock b. dog c. milk d. TV e. egg f. refrigerator

Language Battery -19 — Motor Encoding

Say: Some funny little people called Munchkins live in the Land of Oz. They do not speak our language so if you can act out for them- without words- how to use these things. Now use both hands, but no words!

A. Hammer
B. Harmonica
C. Pencil
D. Screwdriver or lipstick
E. Balloon
F. Scissors

Score: One point for each correct item using both hands for encoding. Where applicable.

Language Battery -20 — Vocal encoding

Say: The Munchkins put a surprise in this sack. Peek in, but don't tell me what you see. Give me hints and I'll try to guess. Give me as many hints as you can, but don't name what it is. I'll guess that!

Score: One point for each appropriate word or phrase describing the object in the sack. (You may wich to have additional candy and let each child keep a piece.)

Language Battery -21 — Categories

Say: Here's a Munchkin Category Game. I'll name three things and you tell what Category they belong to. If I say Ford, Chevrolet, Volkswagon, you say cars (or automobiles) O.K. you try it:

a. red, yellow, blue (colors)
b. apples, bananas, oranges, (fruits, food, you eat them)
c. shirts, dresses, coats (clothes, you wear them)
d. table, bed, chairs (furniture)
e. 9, 3, 7, 5 (numbers)
f. a, b, g, r, s, m (letters)

Score: One point for each correct category.

Language Battery -22 Go-Togethers

Say: See this. What goes with it? (Dem. Card)
Now show me what does with each of these.

a. what goes with sock? (shoe)
b. what goes with cup? (saucer)
c. what goes with a pencil? (tablet)
d. what goes with a hairbrush? (comb)
e. what goes with a ball? (bat)
f. what goes with a nail? (hammer)

Score: One point for each correct answer.

Language Battery -23 Articulation

Say: Name these things. What is this?

a. fish
b. log cabin
c. saw
d. rocket
e. vacuum cleaner
f. jump rope
Listen for the sounds circled-

Score: one point for each underlined sound.

Language Battery -24 Conversation

1. What TV program do you like best?
2. What's your name?
3. How old are you?
4. Where do you live?
5. Tell me something about your family.
6. What do you think school will be like?

Score: One point for each appropriate answer, evaluating content rather than articulation.

Visual Memory I

I

I

I

II

Visual Memory II

II

A 16

A. 12

V 11 a.

V 11 b.

V 11 c.

V 11 d.

V 11 e.

V 11 f.

Visual Battery 9 Discrimination Card a, b, e, f.

A. 12

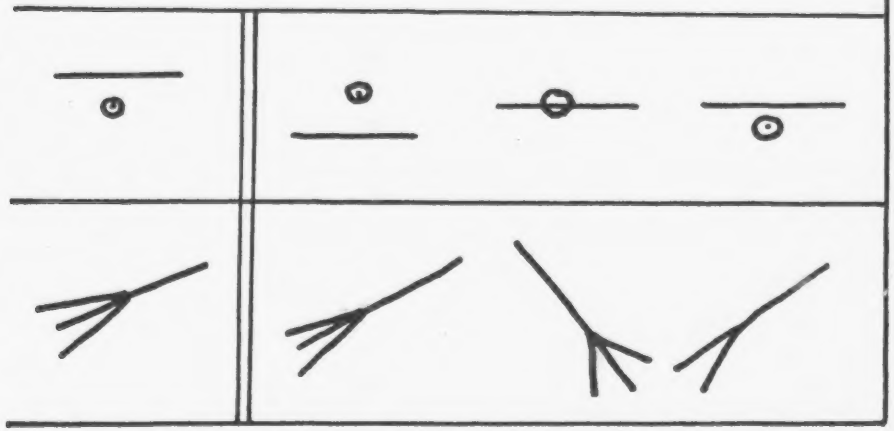
A. 12

12 V.

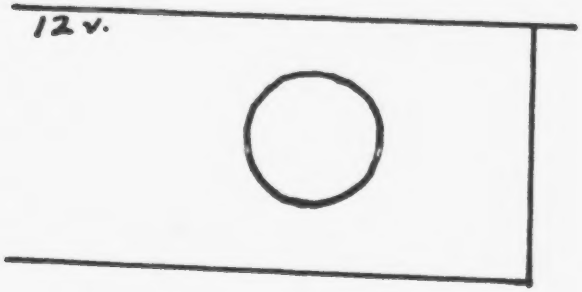
Visual Battery 9

a. b.

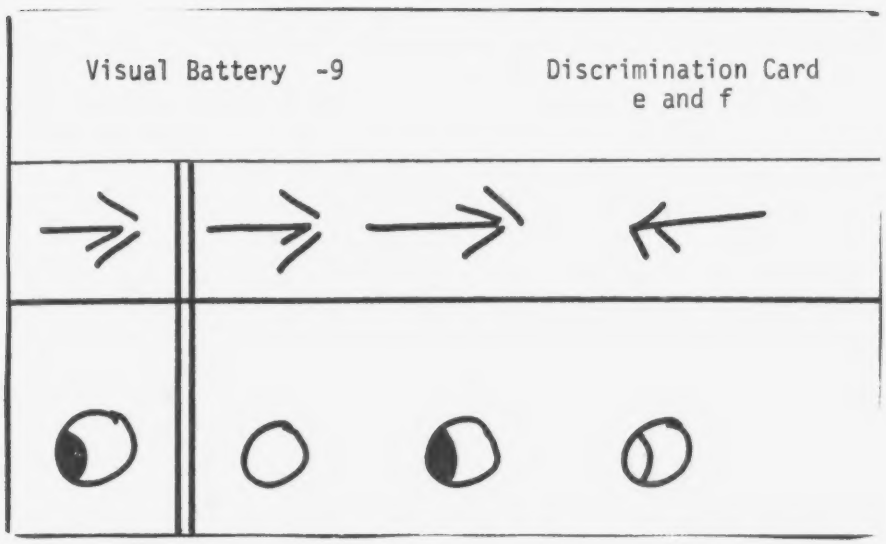
Visual Battery 9 c. d.

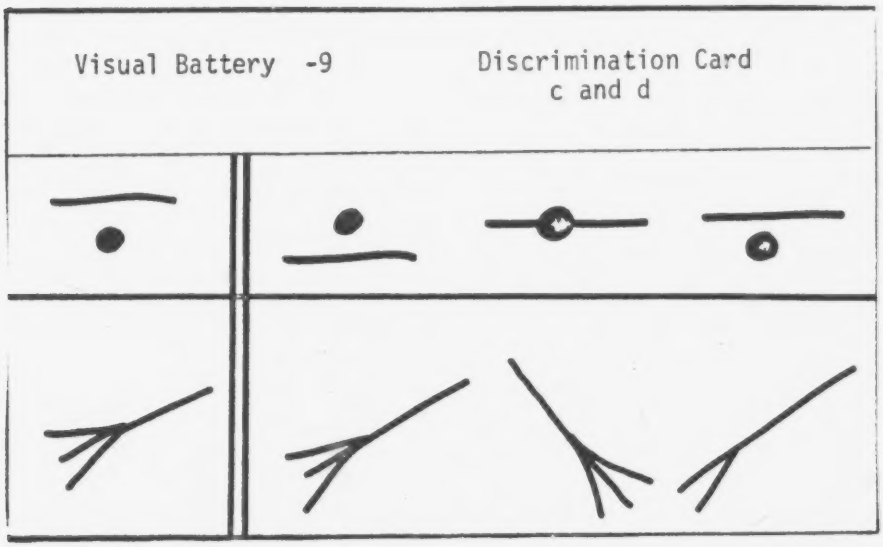


12 v.



Visual Battery 9


Visual Battery -9
Discrimination Card
e and f


Visual Battery -9
Discrimination Card
c and d

APPENDIX C

FORMULA FOR PEARSON'S PRODUCT MOMENT

CORRELATION COEFFICIENT

$$\frac{\sum_{i=1}^{N} x:y:}{\sqrt{\left(\sum_{i=1}^{N} xi^2\right)\left(\sum_{i=1}^{N} yi^2\right)}}$$

APPENDIX D

GLOSSARY

de Hirsch Predictive Index - A battery consisting of parts of kindergarten tests each of which test showed high and significant correlation at the end of second grade with the ORP Index and the Metropolitan Spelling Test.

Frostig Visual Perception Test - A battery of tests for children aged four to eight measuring visual perception such as eye-hand coordination, figure-ground discrimination, and spatial relationships.

"High risk" - Symptomatic evidence of future learning problems.

Ilg and Ames Readiness Battery - The Gesell Developmental Tests for ages five to ten, assesses children's behavioral development. (New York: Harper and Row, 1965.)

Illinois Test of Psycholinguistic Abilities - A systematic standardized language test for children aged two to ten. (Kirk, McCarthy and Kirk, 1968.)

Kephart Norms - The Purdue Perceptual-Motor Survey (Roach and Kephart, 1966) rates perceptual-motor development for children aged six to nine.

Psycho-educational Testing - Testing procedures using batteries of tests from psychological and educational fields.

Psychoneurologically Impaired - Impairment in the interrelationship of the nervous system and the mental functions.

Screening Center - Room or area where testing procedures using the Wizard of Oz Screening take place.